# **Chapter 3: Key Components**

### **A. ATmega128a**

The ATmega128a is part of the AVR 8-bit family. This means that it uses 8 bits to represent integers. It also means that it is a reduced instruction set computer (RISC), so we have a reduced set of instructions we can use when programming this microcontroller. For our purposes this knowledge does not really matter since we programmed the microcontroller using embedded-C. The IAR Embedded IDE translated and optimizes our C programs into assembly.

Some key features are the following:

* 128K Bytes In-System Reprogrammable Flash
* 4K Bytes Internal SRAM
* 4K Bytes EEPROM
* Two Expanded 16-bit Timer/Counters with Separate Prescalers, Compare Mode, and Capture Mode
* Real Time Counter with Separate Oscillator
* Dual Programmable Serial USARTs
* 53 Programmable I/O Lines

### **B. Temperature sensor**

### **C. Humidity sensor**

### **D. RTC**

### **E. Co2 sensor**